

# ATyS M

## Motorised and automatic changeover switches

from 40 to 160 A



atys-md\_002\_b\_1\_cat



atys-mg\_001\_b\_1\_cat



atys-mp\_001\_b\_1\_cat

### Function

**ATyS M** is a range of single-phase or three-phase modular motorised changeover switches with positive break indication. They enable on load changeover switching of two supply sources in remote control, automatic or manual mode. They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

### Description

This quick-acting source transfer switch incorporates:

1. 2 mechanically interlocked switches including an electronic control-command module.
2. A quick-acting electric control unit enabling automatic or manual system operation.
3. Electrical specifications compliant with product standards, and a version identification.
4. Changeover switch wiring identification.
5. Control connections.
6. An RJ45 connection for a remote interface D10 / D20.
7. A connector for RS485 communication (Modbus), for the version with communication.



## References

Description	No. of poles	Part number	Aux. supply	COM	Application type
ATYS d M	2 P	9323 20**	230 VAC	No	Motorised changeover switch
	4 P	9323 40**			
ATYS t M	4 P	9344 40**	230 / 400 VAC	No	Network/Network ATS
ATYS g M	2 P	9353 20**	230 VAC	No	Network/Network ATS
	4 P	9354 40**	230 / 400 VAC		Network/Genset ATS
ATYS p M	4 P	9364 40**	230 / 400 VAC	No	Network/Network ATS
		9384 40**		Yes	Network/Genset ATS

\*\* - stands for a two characters of a partnumber depending on the rating of the switch

## Optional accessories

Auxiliary contacts	Each product can take up to 2 auxiliary contact blocks. Each accessory integrates 1 NOC auxiliary contact (for each position I, O and II) 1309 0001 or NONC for 1309 0011. Characteristics: 250 VAC / 5 A maximum. The ATYS d M includes 1x aux contact reference 1309 0001 as standard.		Ref. : 1309 0001 Ref. : 1309 0011
Bridging bars	To provide a common point on the outgoing side of the switch (load side).		Single phase product: Rating ≤ 125 A: 1309 2006 Rating 160 A: 1309 2016
			Three phase product: Rating ≤ 125 A: 1309 4006 Rating 160 A: 1309 4016
Voltage sensing and power supply tap	It allows connection of 2 x 1.5 mm <sup>2</sup> voltage sensing or power cables. The single-pole voltage sensing tap can be mounted in the terminals without reducing their connecting capacity. Do not use with the bridging bar.		Ref. : 1399 4006 2 parts/ref.
Terminal shrouds	Protection against direct contact with terminals or connecting parts. Other features: Perforations allowing remote thermographic inspection without removal. Possibility of sealing. Not for use on terminals with bridging bars fitted.		Ref. : 2294 4016 2 parts/ref.
Double power supply - DPS	Allows an ATYS d M to be supplied by two 230 Vac 50/60 Hz networks.		Ref. : 1599 4001

#### Product characteristics according to IEC 60947-3 and IEC 60947-6-1

Thermal current $I_{th}$ at 40°C	40 A	63 A	80 A	100 A	125 A	160 A
Frequencies	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Rated insulation voltage $U_i$ (power circuit)	800 V	800 V	800 V	800 V	800 V	800 V
Rated impulse withstand voltage $U_{imp}$ (power circuit)	6 kV	6 kV	6 kV	6 kV	6 kV	6 kV
Rated insulation voltage $U_i$ (operation circuit)	300 V	300 V	300 V	300 V	300 V	300 V
Rated impulse withstand voltage $U_{imp}$ (operation circuit) - ATYS d M	4 kV	4 kV	4 kV	4 kV	4 kV	4 kV
Rated impulse withstand voltage $U_{imp}$ (operation circuit) - ATYS d M	2,5 kV	2,5 kV	2,5 kV	2,5 kV	2,5 kV	2,5 kV

#### Rated operational current $I_g$ (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B	A/B	A/B	A/B	A/B	A/B
415 VAC	AC-31 A / AC-31 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-32 A / AC-32 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-33 A / AC-33 B	-/40	-/63	-/80	-/100	-/125	-/125

#### Rated operation current $I_g$ (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	40/40	63/63	80/80	100/100	125/125	160/160

#### Control power supply

	min / max	min / max	min / max	min / max	min / max	min / max
Power supply voltage 230 VAC (ATYS d M, t M and g M)	176/288 VAC	176/288 VAC	176/288 VAC	176/288 VAC	176/288 VAC	176/288 VAC
Power supply voltage 230VAC (ATYS p M)	160/305 VAC	160/305 VAC	160/305 VAC	160/305 VAC	160/305 VAC	160/305 VAC
Consumption in stabilised state	6 VA	6 VA	6 VA	6 VA	6 VA	6 VA
Inrush current under 230 VAC	dM / tM / gM	30 A	30 A	30 A	30 A	30 A
	pM	20 A	20 A	20 A	20 A	20 A

#### Short-circuit capacity (without protection)

Rated short-time withstand current 1 s, $I_{cw}$	4 kA rms	4 kA rms	4 kA rms	4 kA rms	4 kA rms	4 kA rms
Rated short-time withstand current 30ms, $I_{cw}$	10 kA rms	10 kA rms	10 kA rms	10 kA rms	10 kA rms	10 kA rms
Rated short-circuit making capacity $I_{cw}$	17 kA peak	17 kA peak	17 kA peak	17 kA peak	17 kA peak	17 kA peak

#### Fuse protected short-circuit withstand if using gG DIN fuses

Prospective short-circuit current	50 kA rms	50 kA rms	50 kA rms	50 kA rms	50 kA rms	40 kA rms
Associated fuse rating	40 A	63 A	80 A	100 A	125 A	160 A

#### Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s<sup>(1)</sup>

Rated short-time withstand current 0.3s $I_{cw}$ (kA rms)	7	7	7	7	7	7
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#### Circuit breaker protected short-circuit withstand\*

Manufacturer	Range	Breaking capacity	Icu max					
Schneider Electric	NSX	36 kA	37 kA rms	37 kA rms	37 kA rms	37 kA rms	30 kA rms	30 kA rms
ABB	TMAX T2	36 kA	T	T	T	T	T	31 kA rms
SIEMENS	3VL1	70 kA	20 kA rms	20 kA rms	20 kA rms	20 kA rms	20 kA rms	20 kA rms
EATON	NZMB1	25 kA	T	T	T	T	T	T
	NZMC1	36 kA	30 kA rms	30 kA rms	30 kA rms	30 kA rms	30 kA rms	30 kA rms
TERASAKI	S160-NJ	36 kA	12 kA rms	12 kA rms	12 kA rms	12 kA rms	12 kA rms	12 kA rms
	H160-NJ	125 kA	20 kA rms	20 kA rms	20 kA rms	20 kA rms	20 kA rms	20 kA rms
LEGRAND	DPX 125	25 kA	T	T	T	T	T	-
	DPX 160	25 kA	T	T	22 kA rms	22 kA rms	22 kA rms	22 kA rms
HAGER	x160	25 kA	30 kA rms	26 kA rms	25 kA rms	23 kA rms	21 kA rms	20 kA rms

#### Switching time (Standard setting)

I - 0 or II - 0	45 ms	45 ms	45 ms	45 ms	45 ms	45 ms
I - II or II - I	180 ms	180 ms	180 ms	180 ms	180 ms	180 ms
Duration of "electrical blackout" at Un	90 ms	90 ms	90 ms	90 ms	90 ms	90 ms

#### Mechanical characteristics

Durability (number of changeovers)	10 000	10 000	10 000	10 000	10 000	10 000
Weight of single-phase versions - w/o packaging	2,8 kg	2,8 kg	2,8 kg	2,8 kg	2,8 kg	2,8 kg
Weight of single-phase versions - with packaging	3,5 kg	3,5 kg	3,5 kg	3,5 kg	3,5 kg	3,5 kg
Weight of three-phase versions - w/o packaging	3,5 kg	3,5 kg	3,5 kg	3,5 kg	3,5 kg	3,5 kg
Weight of three-phase versions - with packaging	4,2 kg	4,2 kg	4,2 kg	4,2 kg	4,2 kg	4,2 kg

(1) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.

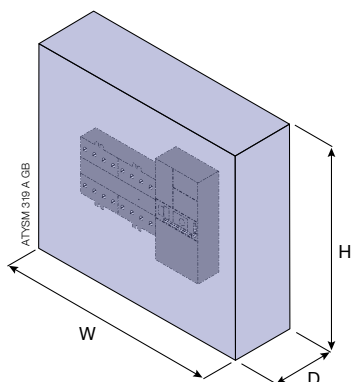
For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

\* - Subjected to MCCB's short circuit current limiting curves reading precision and data.

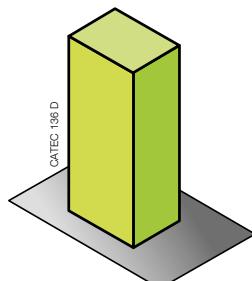
T - coordination possible up to the Max Icu value of the circuit breaker.

Values are based on characteristics published by breaker manufacturers at the time of the publication. Socomec cannot be held responsible for any modifications of those characteristics or for non-performance of circuit breakers

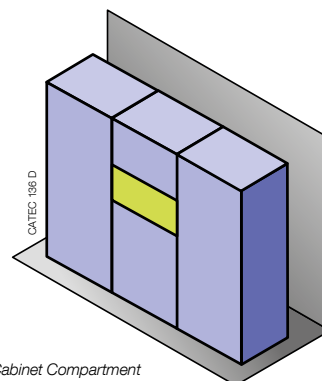
## Product integration data in compliance with IEC / EN 61439-1



Below listed data is applicable to :



Enclosure



Cabinet Compartment

Dimensions of the Functional Unit*			Max operational current, I <sub>o</sub> (A)					
H (mm)	W (mm)	D (mm)	40A	63A	80A	100A	125A	160A
600	400	200	40	63	80	100	125	160
300	450	310	40	63	80	100	125	136
300	350	310	40	63	80	100	125	125

\* - if these exact dimensions are not available an equivalent volume enclosure shall be utilised

Maximum ambient temperature	
External	35 °C
Internal	60 °C

to be utilised with bridging bar

2P 13092006	2P 13092016
4P 13094006	4P 13094016

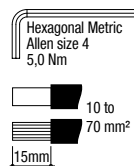
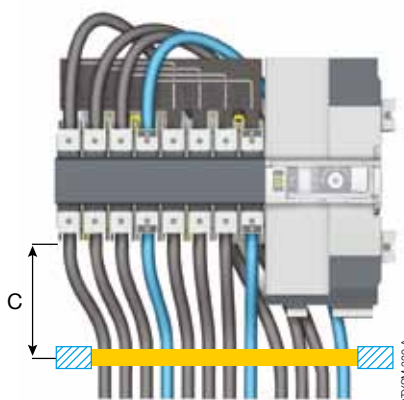
Copper cable min cross-section, mm<sup>2</sup>

1x10 mm <sup>2</sup>	1x16 mm <sup>2</sup>	1x25 mm <sup>2</sup>	1x 35 mm <sup>2</sup>	1x 70 mm <sup>2</sup>	1x 70 mm <sup>2</sup>
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Rating		Power dissipation in W/pole					
		40 A	63 A	80 A	100 A	125 A	160 A
Preferred source	W/pole	0,6	1,2	2,2	4	5	6
Alternative source*	W/pole	0,6 + 0,3	1,2 + 0,8	2,2 + 1,3	4 + 2	5 + 3,1	6 + 5

\* - when supplied from alternative source the current passes through the switch + bridging bar

## Wiring example: Neutral on the right



C - Min power cable length	400 mm
C - Min distance to first cable fixing support	400 mm